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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,831	01/30/2004	Chris Fortis Dimas	AP999US	3858

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EXAMINER

PEACE, RHONDA S

ART UNIT PAPER NUMBER

2874

DATE MAILED: 05/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/766,831

Applicant(s)

DIMAS ET AL.

Examiner

Rhonda S. Peace

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to ^{application} communication(s) filed on 30 January 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0804
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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Information Disclosure Statement

The information disclosure statement (IDS) submitted on ^{8/02}~~1/30~~/2004 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner is considering the information disclosure statement.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 8-13, 15, 23-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Wojcik et al (US 5896483).

With reference to claims 1-3, and 26-29, Wojcik et al teaches an invention comprising a light source 28 optically coupled to a liquid core light guide 24, wherein the output of the liquid core light guide is optically coupled to a light shaping device which collimates the light into a well defined beam spot (Figure 10 and 11, column 1 lines 39-48). Although Wojcik does not specify the specific instrument to which this liquid core light guide invention is to be coupled, it is inherent that the invention, as described by Wojcik et al would be coupled to an apparatus, for the purposes of focusing light to a desired position within the apparatus. Further, Wojcik et al specifies this light shaping device to comprise one or more lenses located within holder 48 to stabilize the components at the output end of the liquid core light guide, making the lens or lenses an

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integral part of the outlet end of the light guide (column 1 lines 39-48, column 2 lines 51-55, column 8 lines 60-67 and column 9 lines 1-10).

Addressing claims 8-13 and 15, Wojcik et al further defines his liquid core light guide 24 as being encased within a sheath 44, wherein both ends of the light guide 24 are sealed with endplugs 50 (figure 10, column 4 lines 30-31, column 7 lines 5-8).

These endplugs 50, may be made of glass, and also may be hollow (column 6 lines 13-24). Also, Wojcik et al shows a ferrule 56, analogous to an O-ring, applied to the ends of light guide where this ring may be compressed so to act as a leak-proof gasket (Figure 1, column 7 lines 5-10 and 16-26).

With respect to claim 23-25, 30, and 31, Wojcik et al teaches the use of a housing 48 comprising a plurality of lenses 52 and 54, biconvex lens 54 acting as a collector lens means, on a moveable mount, so that the lenses can be adjusted to the desired distance between themselves and the endplug 50 (Figure 10, column 8 lines 60-66 and column 9 lines 1-10, column 9 lines 51-67). This housing serves as a coupling and adapting means between the outlet end of the light guide and the input port of the optical apparatus as described by the applicant in claim 23. Furthermore, the moveable mount allows the user to position the lenses so that light is coupled to the input of the optical apparatus described in claim 1, thus fulfilling the requirements of claim 24. Lenses 52 and 54 may be alternatively configured to what is shown in Figure 10, including inverting both lenses with respect to one another (column 9 lines 55-57). Using this alternative configuration, lens, or light shaper, 52 is analogous to the lens

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referred to in claim 25, and may be used to collimate light signals to the optical apparatus.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wojcik et al (US 5896483).

In addressing claims 4-7, Wojcik et al describes the invention as illustrated above, making no reference to the use of negative lenses. In relation to the lens or lenses used within the light delivery system, the biconvex lens or positive lens, 54 and light shaper 52, Wojcik et al describes that these lenses may be tailored to produce the required collimation and/or focusing of the light from the light guide, thereby including the permutations of both positive and negative lenses (column 9 lines 51-67 and column 10 lines 1-3). Therefore, it would be obvious to one skilled in the art to use either a positive lens, or negative lens, or a combination of the two, to achieve a wide variety of configurations that provide the collimation and/or focusing desired.

With regards to claim 14, Wojcik describes the invention, as described above; moreover, a sealing member that fits around the sheath is not disclosed. However, the endplugs 50, as described above, are a functional equivalent to the sealing members

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described by the applicant within claim 14, since both geometric configurations effectively seal the liquid waveguide and prevent escape of the liquid. It would have been an obvious matter of design choice to use a sealing member that fits around the external surface of the sheath, since the applicant has not disclosed that a sealing member which fits around the external surface of the sheath solves any stated problem, or is for any particular purpose and it appears that the invention would perform equally well with a sealing member, such as the endplug 50 described by Wojcik et al, which fits entirely inside the sheath.

Claims 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wojcik et al (US 5896483), and in further view of Fein et al (US 6016372).

Pertaining to claim 16, Wojcik et al does disclose the invention as described above, but however, does not disclose the use of a fiber bundle within the invention. Fein et al does describe a light guide device comprising liquid core 12 wherein a fiber bundle 18 is used to couple the liquid core light guide to a light source 16 (Figure 1, column 6 lines 9-15). It would have been obvious to one skilled in the art to combine the teachings of Wojcik et al and Fein et al in order to increase the amount of light signals that can be coupled from the light source to the apparatus placed at the output end of the liquid light guide.

With respect to claim 17, Wojcik et al discloses the invention as described above, but however, does not disclose the use of a transparent rod, with one end connected to the fiber bundle and where the distal end of the transparent rod is the outlet portion of

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the light guide. Fein et al does disclose the use of an optically clear rod 14, placed such that one end is connected to the fiber bundle, and the other end acts as the outlet end of the liquid core light guide (Figure 1, column 6 lines 23-27). It would be obvious to one skilled in the art to combine the teachings of Wojcik et al and Fein et al, since doing so significantly increases the signal to noise ratio when compared to the prior art, increasing the sensitivity of the device (column 6 lines 32-45).

Pertaining to claims 18-21, Wojcik et al, in further view of Fein et al, teaches the device as described above. Furthermore, Wojcik et al teaches a lens or lenses integral to the output of liquid core light guide, within the portion termed as the light delivery system. In relation to the lens or lenses used within the light delivery system, the biconvex lens or positive lens, 54 and light shaper 52, Wojcik et al describes that these lenses may be tailored to produce the required collimation and/or focusing of the light from the light guide, thereby including the permutations of both positive and negative lenses (column 9 lines 51-67 and column 10 lines 1-3). Therefore, it would be obvious to one skilled in the art to use either positive lenses, or negative lenses, or a combination of the two, to achieve a wide variety of configurations that provide the collimation and/or focusing desired.

Addressing claim 22, Wojcik et al discloses the invention as described above, but however, does not disclose the use of a fluorescent microscope within the invention. Fein et al does describe the use of an analysis instrument 22 (Figure 1, column 6 lines 9-15), and further specifies that this analysis instrument may utilize fluorescence spectroscopy (column 60 lines 60-64). It would be obvious to one skilled in the art that

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a fluorescent microscope is an analysis instrument that utilizes fluorescence spectroscopy, and thereby falls within the intended scope of the device as described by Fein et al.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Eastgate (US 6163641), Nath (US 6418257), and Nath (US 5857052) all illustrate similar embodiments of a liquid light guide wherein the input and output sections are sealed with a transparent plug and clamped with an O-ring. Kaltenbacher et al (US 6813427) shows a liquid light guide device for use with a spectrometer, wherein this device comprises fiber bundles, and a GRIN lens at the output of the liquid waveguide.

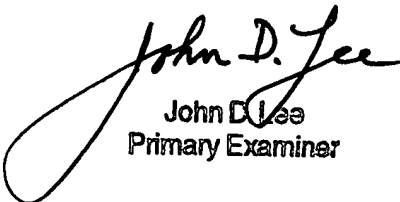
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda S. Peace whose telephone number is (571) 272-8580. The examiner can normally be reached on M-F (8-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272- 2344.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Rhonda S. Peace
Examiner
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Primary Examiner